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10/825,833

04/16/2004

Douglas Brisbin

NSC1-H1400 [P05941]

9453

7590

10/20/2005

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EXAMINER

DICKEY, THOMAS L

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/825,833

Applicant(s)

BRISBIN ET AL.

Examiner

Thomas L. Dickey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/16/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. The amendment filed 09/16/05 has been entered.

Election/Restriction

2. Applicant's election without traverse of Group II, claims 1-10 in the Paper filed 09/16/05 is acknowledged.

Oath/Declaration

3. The oath/declaration filed on 4/16/2004 is acceptable.

Drawings

4. According to applicant's specification at pages 5-6, figures 2-5 are graphs of measurements performed on PMOS devices having the (conventional) Fig. 1 structure and a conventionally produced P-LDD implant 6. Since the devices being measured are conventional, one must conclude that the measurements are conventional. For this reason it appears that figures 2-5 should be designated by a legend such as --Prior Art-- because only that which is old (conventional structure, conventional implant) is illustrated. See MPEP § 608.02(g). Furthermore, on page 6 applicants state the figure 6 is a simulation of the drain junction breakdown point and maximum impact ionization point of, once more, a PMOS device having the (conventional) Fig. 1 structure and a

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conventionally produced P-LDD implant 6. For this reason it appears that figure 6 should also be designated by a legend such as --Prior Art-- because only that which is old (conventional structure, conventional implant) is illustrated. See MPEP § 608.02(g).

Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Priority

5. Applicants have made no claim for priority.

Information Disclosure Statement

6. The Information Disclosure Statement filed on 4/16/04 has been considered.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

A. Claims 1 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by TADA ET AL. (2003/0122195).

Tada et al. discloses a PMOS device with a drain 310 junction breakdown point and a maximum impact ionization point (both located within area "A" in figure 5), and including a gate 308; a body 305; an extended drain region 310-314-302 formed in the body 305, including a drain 310 formed in the body 305, a deep drain implant 302, and a lightly doped drain implant 314 between the deep drain implant 302 and the gate 308, at least a portion of the lightly doped drain implant 314 is located between the drain 310 and the gate 308, and at least a portion of the deep drain implant 302 is located below the drain 310, wherein the drain junction breakdown point and the is located within at least the body 305. Note figures 5 and 6 and paragraphs 0135-0149 of Tada et al.

The applicant's claims 1 and 4 do not distinguish over the Tada et al. reference regardless of the functions allegedly performed by the claimed device, because only the device per se is relevant, not the recited function of reducing any drain breakdown voltage walk-in exhibited by the device below a predetermined value.

Note that functional language in a device claim is directed to the device per se, no matter which of the device's functions is referred to in the claim. See *In re Ludtke and Sloan*, 169 USPQ 563 at 567, and *In re Swinehart* 169 USPQ 226, both of which make

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it clear that it is the patentability of the device per se which must be determined in a "functional language" claim and not the patentability of the function, and that an old or obvious device alleged to perform a new function is not patentable as a device, whether claimed in "functional language" claims or not. Note that applicant has the burden of proof in such cases, as the above caselaw makes clear. See also *In re Schreiber*, 44 USPQ2d 1429, 1432 (Fed. Cir. 1997), for a discussion of the roles of examiner and applicant in determining when and how functional limitations distinguish a claim from prior art disclosing the same structure.

B. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by AHLERS ET AL. (2003/0011039).

Ahlers et al. discloses a PMOS device (note, for example in claim 1, that Ahlers et al. disclose either a PMOS or an NMOS, although the NMOS version is illustrated in figure 8A) with a drain junction breakdown point DB0 and a maximum impact ionization point DB1, and including a gate G; a body (formed from layers E_1 - E_x); an extended drain region 4 formed in the body (E_1 - E_x), including a drain 3 formed in the body (E_1 - E_x), a deep drain implant 1, and a lightly doped drain implant 2 between the deep drain implant 1 and the gate G, at least a portion of the lightly doped drain implant 2 is located between the drain 3 and the gate G, and at least a portion of the deep drain implant 1 is located below the drain 3, wherein both the drain junction breakdown point DB0 and the maximum impact ionization point DB1 are located within at least one of the body (E_1 - E_x) and the drain and located sufficiently far from the gate G. Note figures 8A (showing

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breakdown and ionization points DB0 and DB1 separated from gate G), 8B, 9B, and paragraphs 0091-0118 of Ahlers et al.

The applicant's claims 1-10 do not distinguish over the Ahlers et al. reference regardless of the functions allegedly performed by the claimed device, because only the device per se is relevant, not the recited functions of reducing any drain breakdown voltage walk-in exhibited by the device below a predetermined value (recited in claims 1,6,9, and 10), or causing the device to exhibit no significant drain breakdown voltage walk-in (recited in claims 2,3, and 5, with "no significant drain breakdown voltage walk-in" limited to 2 volts absolute magnitude in claim 3).

Note that functional language in a device claim is directed to the device per se, no matter which of the device's functions is referred to in the claim. See *In re Ludtke and Sloan*, 169 USPQ 563 at 567, and *In re Swinehart* 169 USPQ 226, both of which make it clear that it is the patentability of the device per se which must be determined in a "functional language" claim and not the patentability of the function, and that an old or obvious device alleged to perform a new function is not patentable as a device, whether claimed in "functional language" claims or not. Note that applicant has the burden of proof in such cases, as the above caselaw makes clear. See also *In re Schreiber*, 44 USPQ2d 1429, 1432 (Fed. Cir. 1997), for a discussion of the roles of examiner and applicant in determining when and how functional limitations distinguish a claim from prior art disclosing the same structure.

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Furthermore, the applicant's claims 6-8 do not distinguish over the Ahlers et al. reference regardless of the processes used to form the device, because only the final product is relevant, not the recited process of manufacturing the device in accordance with a BiCMOS process, or the recited process of controlling an implant dose employed to produce the lightly doped drain implant so that the implanting dose is much less than 2.23×10^{12} ions/cm², and at least substantially equal to 1.15×10^{12} ions/cm².

Note that a "product by process" claim is directed to the product per se, no matter how actually made. In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and In re Marosi et al., 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above caselaw makes clear. See also MPEP 706.03(e).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas L Dickey whose telephone number is 571-272-1913. The examiner can normally be reached on Monday-Thursday 8-6.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Thomas L. Dickey', is positioned above the printed name.

Thomas L. Dickey
Patent Examiner
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10/05